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ABSTRACT

The effects of student characteristics and remedial program placement policy on academic achievement and other outcomes were studied at 10 Michigan community colleges. The study population consisted of 3,448 students enrolled in remedial writing at colleges with a compulsory remedial placement policy and 2,669 students enrolled in remedial writing at colleges with a voluntary placement policy. The influence of the following student characteristics was assessed: age, sex, race/ethnicity, residence, student status, educational level, high school grade point average (GPA), high school English grade, and financial aid. Outcomes were: GPA and grades in remedial writing and college English, credits earned and number of courses completed, and degree/certification completion. Students in voluntary programs tended to show higher achievement for short-term achievement measures (remedial and college-level writing course grades and GPA), while those in compulsory programs were more likely to be persisters and to perform effectively on measures identified as long-term outcomes. However, the factors of age and full-time or part-time status appeared to independently affect achievement and persistence. (SW)

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REMEDIAL PROGRAM POLICIES, STUDENT DEMOGRAPHIC CHARACTERISTICS AND PERFORMANCE OUTCOMES IN COMMUNITY COLLEGES

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Remedial Program Policies, Student Demographic Characteristics and Performance Outcomes in Community Colleges*

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Introduction

The twin themes of "accountability" and "quality" are issues which community colleges must address for the remainder of this decade. Mounting concern over the perceived decline in student aptitude and prior academic achievement coupled with increasing interest in assessment of student learning outcomes has forced many institutions to re-examine the effectiveness of their academic programs. Nowhere is this more apparent than in the remedial programs and services offered by the community colleges. Since their inception in the higher education "Golden Era" of the 1960's, community colleges have experienced difficulty in the administration of empirical research on student outcomes in remedial courses and programs. Uniform definitions and measures cannot be established for assessment of effectiveness, faculty and staff lack the time or resources to conduct empirical research on student outcomes, and research results show the cost-benefits of courses and programs to be potentially embarrassing to administrators. Meaningful research on the outcomes of remedial education has not been a common activity in community colleges.

A major component of all remedial programs in community colleges is the institutional policy utilized to place students in the various courses and

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services. The two most common methods are compulsory placement into remedial courses, usually based on a skills assessment instrument (e.g. ACT, SAT: in-house examination, etc) and voluntary student enrollment which leaves the final choice of course matriculation to the discretion of the student. Although the remedial placement policy followed by a particular college may have a consequential effect on student achievement, colleges have gravitated back and forth between compulsory and voluntary policies without a full understanding of the impact these policies have on student achievement (Roueche & Snow, 1977). The literature suggests that while placement is primarily an intra-institutional matter, a growing trend during the latter part of the 1980's will be increased involvement by state legislatures and governing boards in requiring remediation for academically deficient students entering college (Morinte, Faskow, and Menditto, 1984; Roueche, Baker and Roueche, 1984).

Critical to the issue of student performance in remedial courses and programs are the background characteristics of faculty and students and the effectiveness of academic policies, instructional techniques and support services. Since the early 1970's, large numbers of low achieving students have entered community colleges (Cohen and Brawer, 1982; Jaschik, 1985). Due to the expansion of funding available to support open access and increasing accountability demands by external agencies, faculty and administrators have sought to establish academic policies which carefully sort and channel students into appropriate entry-level courses and enhance success through strict requirements for degree completion (McCabe, 1981). It is reasonable to ask, however, if student performance in academic courses and curricula is likely to improve or decline with the implementation of voluntary or compulsory remedial

placement policies. Does the type of placement policy result in higher grades or completion rates in a remedial course? Are students enrolled in institutions with compulsory remedial placement policies more likely to complete the course, to earn a higher course grade, to complete more courses and credits, to earn a higher college GPA, and to graduate with a certificate or associate degree than students enrolled in institutions with voluntary remedial placement policies? We shall present some available data in this article which address these questions.

Summary of Previous Research

Although the literature is extensive in relationship to remedial education in community colleges, the major portion of the research on the topic is comprised of single institution studies of the effect of ascriptive student characteristics and pedagogical techniques on student achievement. Multi-institutional and longitudinal have been attempted encompassing a large number of remedial students, but they remain the exception (Roueche and Snow, 1977; Friedlander, 1980). Perhaps the most widely quoted research studies have been those completed by Cross (1971; 1976) and Astin (1975; 1977; 1982). Cross found that remedial students served by the community colleges exhibit major differences from the traditional students on characteristics such as academic achievement in secondary school; family socioeconomic background; self-esteem and less willingness to take chances; prior educational achievement in the family; and orientation toward vocational rather than academic subject mastery.

Astin's studies have focused mainly on student demographic characteristics which affect college matriculation and graduation. Significant to community colleges and their remediation efforts has been the over-representation of minorities in these institutions. Given the deficient academic skills and low

achievement levels of students in remedial programs, it is possible that remediation efforts in community colleges have become simply another barrier which students must overcome to reach their educational goals. Indeed, critics of the community such as Astin, Karabel and Zwerling have stated that equal educational opportunity may be only an illusion and that community colleges are an integral component in the preservation of the present social class structure, with remediation abetting this "sorting out process" (Karabel and Astin, 1975; Zwerling, 1976).

Several researchers have examined characteristics of students enrolled in voluntary and compulsory remedial programs. Friedlander (1980) found that students who felt confident in a particular skill were apt to enroll in remedial courses in institutions with a voluntary placement policy than students who were not as confident in that skill. Other studies have suggested that only a small percentage of students who could profit most from remediation actually made use of remedial programs when given the choice (Maxwell, 1979; Friedlander, 1981).

These and other studies have contributed to our understanding of remedial students and to the important role student characteristics play in influencing educational outcomes. However, little, if any comprehensive research has been attempted regarding the effect of academic program structure and policies on student achievement in remedial courses and curricula. Further, there is no evidence in the literature of multi-institutional and longitudinal studies that have been conducted to determine the effect of remedial program structure and placement policy (compulsory or voluntary) on student achievement during and after college attendance. Data are either unavailable or unpublished regarding the flow and performance of students enrolled in community colleges with voluntary and compulsory remedial placement policies at critical checkpoints during college attendance: enrollment in a remedial course, course completion,

course grade, enrollment in sequential "regular" college courses, total college courses and credits completed, college GPA, and achievement of a certificate or associate degree.

To summarize, while interest in the flow and performance of students enrolled in remedial courses and curricula has increased as greater numbers of students with marginal academic skills have entered community colleges in the 1970's and 1980's, the available research has not kept pace with changing patterns of enrollment and public interest. The present study sought to extend understanding of the impact of academic program policies (i.e., remedial placement policies) on student academic achievement when accounting for selected student demographic characteristics. Specifically, the study attempts to redress deficiencies in earlier research by examining the effect of remedial courses through analysis of student educational outcomes in community colleges which have a compulsory remedial placement policy versus those which have a voluntary placement policy.

Causal Model

The theories and suppositions of Bloom (1971) and Cross (1976) view learning as an outcome of time on task and understanding of a basic task before proceeding to move advanced and complicated tasks. The basic concepts of learning are (1) most students can learn; (2) they learn at different rates; (3) differences in the rate of learning are not taken into account; (4) standard education practices produce a cycle of failure for slow learners based not on their inability to grasp the subject matter, but on group comparison (Carroll, 1963; Black, 1971; Bloom, 1971). It seems reasonable to expect, given the above premise, that differential patterns of academic achievement would occur among students attending community colleges with different remedial placement policies

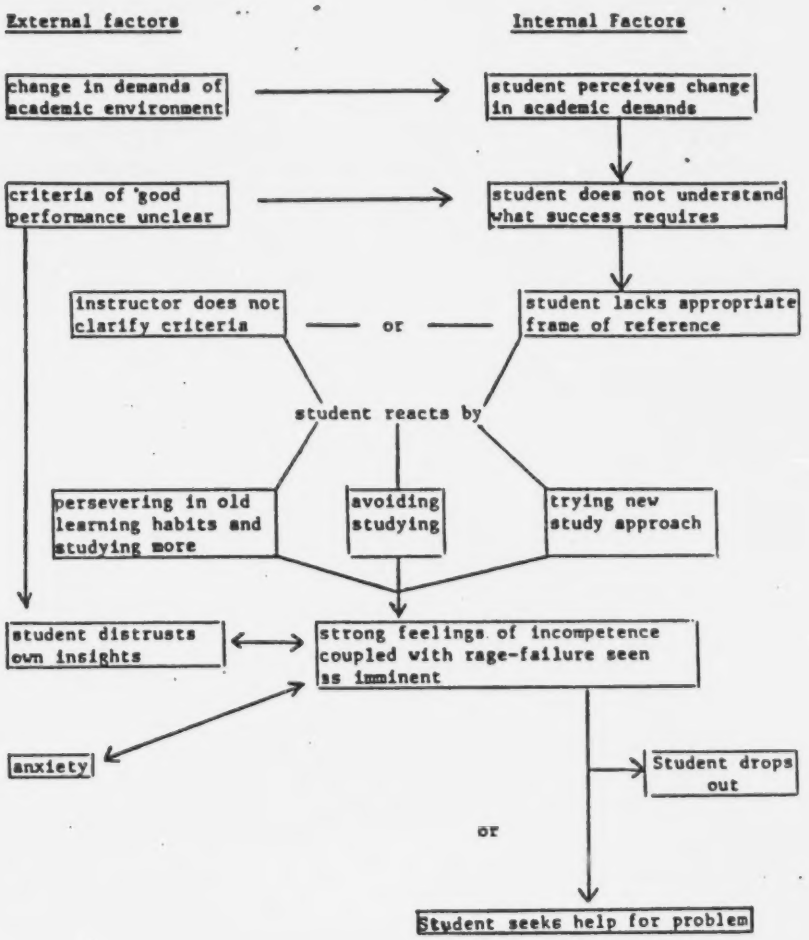
and from their different demographic characteristics within these institutions holding remedial course enrollment constant. Stated in the lexicon of community college faculty and administrators: Students with marginal academic skills need time to learn and an experiment that supports learning. Having a history of failure, these students may be unwilling to devote time and energy to an activity in which they have experienced limited success unless mandated to do so because of academic policies. Therefore, it is possible that students enrolled in community colleges with compulsory remedial placement policies may experience educational outcomes that exceed those of students enrolled in colleges with voluntary policies.

Mastery learning theory is not sufficient in and of itself to depict the influence of remedial placement policies and demographic characteristics on student academic achievement. Students may experience limited success in remedial courses and curricula because they lack the "capacity to represent future consequences in thought" and the intervening influences of "goal setting and self-regulated reinforcement." Learning is designed, in part, to gain "anticipated benefits and to avert future difficulties." Once a decision has been made to reach a goal, self-assessment occurs on a continuous basis and perceived discrepancies become a motivational basis for change. Thus, both goal satisfaction and self-appraisal of negative performance provide an incentive for action.

Several factors are critical to goal setting and goal achievement. They are "goal specificity" and "goal proximity." Goal specificity refers to the type and amount of effort required to foster self-satisfaction which furnishes an indication of personal accomplishment. For example, extremely difficult or simple learning tasks which produce successes or failures reduce motivation and weaken self-confidence. However, goals with a moderate degree of difficulty are

Figure 1

Precipitating Factors That Lead a Student to Seek Help For a Learning Problem


External factors
Internal Factors
change in demands of academic environment
student perceives change in academic demands
criteria of good performance unclear
student does not understand what success requires
instructor does not clarify criteria
or
student lacks appropriate frame of reference
student reacts by
persevering in old learning habits and studying more
avoiding studying
trying new study approach
student distrusts own insights
strong feelings of incompetence coupled with rage-failure seen as imminent
anxiety
Student drops out
or
Student seeks help for problem

Note: From Improving Student Learning Skills by M. Maxwell, 1979, p.48.

in the model. The strongest direct effects on student academic achievement are expected primarily from demographic characteristics and secondly from the remedial placement policy of the institution attended. While students with particular demographic characteristics are not expected to enroll in a particular institution on the basis of compulsory or voluntary remedial placement policies, the subtle influence of demographic characteristics on college choice is expected to be evidenced through analysis of the relationship between the independent and intervening variables.

Figure 2

Proposed Causal Model of the Influence of Student Demographic Characteristics and Remedial Placement policy on Academic Achievement

Selected Student Demographic Characteristics	Remedial Placement Policy	Student Academic Achievement
1. Age	1. Compulsory placement	1. Remedial writing course grade
2. Sex	2. Voluntary enrollment	2. College English grade
3. Race/Ethnicity	3. Voluntary/Non-enrolled	3. College GPA
4. Residence		4. Number of courses completed
5. Student status		5. Total credits earned
6. Educational level		6. Degree Certification/ completion
7. High school GPA		
8. High school English		
9. Financial Aid		

Method

Population

The population chosen for this study included all students (N = 6,117) enrolled in a remedial writing course during the Fall 1978, 1979, and 1980 semesters at ten Michigan community colleges. The identification of the remedial writing course was made on the basis of its specification in the college catalog as prerequisite to the college-level English composition course. College-level composition was defined in this study as a course which would transfer to a senior institution and fulfill the first semester freshman writing requirement.

While there are a wide assortment of remedial/developmental courses offered by community colleges, throughout the United States, students principally enroll in one or more of three courses - reading, writing, and/or mathematics. The completion of at least one course in "English" composition is generally a requirement of all associate degree and one-year vocational certificate curricula in community colleges. This is not the case with either reading or mathematics. In some programs, one or more college-level composition courses are required. Given this universal requisite, the selection of remedial writing ensured a large and accessible student population for the study. Although assessment data are available for mathematics and reading, many students do not enroll because courses in these subject areas generally are not required for graduation. Community colleges uniformly employ one remedial writing course as the prerequisite to beginning college-level English composition and either place or recommended placement in that course for the vast majority of students.

The population was defined initially by selecting only those students who enrolled in a remedial writing course in the selected community colleges during the Fall 1978, 1979 and 1980 semesters. The restriction on remedial course enrollment in a selected institution during selected semesters was necessary in order to permit students sufficient time (four years or more) to complete college study and to eliminate ambiguity in measures of academic achievement. Since a large number of students attending community colleges enroll on a part-time basis, their cumulative academic records were examined through the Winter and Spring semester of 1984, thereby ensuring ample time to experience a wide array of educational outcomes. To avoid replication for those students who registered for remedial writing more than once, group placement was accomplished through determination of the most recent grade earned in the course based on the examination of college transcripts. The restriction that population members be enrolled in ten selected colleges was necessary in order to ensure adequate distribution of the population in institutions with different remedial placement policies and organizational characteristics (location, size and student mix). These restrictions yielded a population of 6,117 respondents (3,237 males and 2,880 females) enrolled in four institutions with a compulsory remedial placement policy (N = 3,448) and six institutions with a voluntary placement policy (N = 2,669) with complete information on all of the variables described below.

Selection of Institutions

Institutional remedial placement policy was the primary criterion used to select the ten community colleges. An examination of the college catalogs from each school for the years 1978-80 disclosed that (1) all ten institutions offered a course in remedial writing and (2) the remedial course placement in

institutions with a compulsory policy was accomplished through a national standardized test (e.g. ACT or SAT) and/or in-house writing sample examination.

Another dimension utilized in the selection of the ten community colleges was variation in the demographic characteristics of their primary service region. Differences in service region characteristics were critical since the inclusion of students from diverse socioeconomic backgrounds made it possible to determine not only differences between the remedial student groups and colleges but also the basis for generalization of the findings to other community colleges. Most of the college primary service regions covered one county unit. However, several institutions only included a portion of the county unit with in-district status determined by residency in one or more school districts. For this reason, selected characteristics of the primary service region were examined both by county and by individual locality. Two institutions were "urban" in location while five were "suburban" and three were "small city" in location. The service regions ranged in size from 132,000 residents to 2,357,000 residents with the percentage of families below poverty level ranging from 11.8% in two suburban colleges and one urban college to 3.9% in one suburban college. The distribution of students by race in the ten community colleges ranged from 96.5% black in one urban community college to 4% black in one suburban college. Similar variations were noted for other characteristics of students enrolled in the selected institutions such as their distribution by age, sex, in-district/out-of-district residence, enrollment status, high school GPA, high school English grade, and financial aid. Generally, it could be observed that colleges with large concentrations of minority students exhibited a strong representation of students with a less-than-average high school GPA and a high school English grade of "D" or below.

Variables

The model estimated in this study (see Figure 2) included three variable sets in causal sequence: (1) selected student demographic characteristics, (2) remedial placement policy, and (3) student academic achievement. On-site visits were made to each of the ten community colleges to collect the required data. The following procedures were utilized in the compilation of the data set for student and institutional variables.

Institutional Characteristics Data

Primary service region data for each institution were drawn from statistical data provided by the U.S. Department of Commerce, Bureau of the Census and the Wayne State University, Center for the Urban Studies based on the 1980 census. Specific data (remedial placement policy) for each of the community colleges was obtained from the Registrar, Financial Aid, Admissions, and/or Institutional Research Offices of the respective institutions.

Student Characteristics Data

A case-by-case method was utilized to gather the student data set. Admissions data and class lists were provided by each college to identify all students who enrolled in the remedial writing course during the fall semester of 1978, 1979, and 1980. Based on these data, demographic characteristics were tabulated for each student enrolled in remedial writing. Measures of student academic achievement were ascertained by examining individual college academic transcripts through the winter semester, 1984 or the final major semester (or quarter) of the 1983-84 academic year. These achievement

measures were identified as the following: [1]grade in remedial writing course ; [2]grade in subsequent college-level English composition course; [3]college grade point average; [4]total number of courses completed during and after enrollment in the remedial writing course ; [5]total credits earned; [6]and associate degree or vocational certificate earned.

Three types of statistical analyses were utilized to assess the effects of selected student demographic characteristics and institutional remedial placement policy have on student academic achievement. Each analysis pertained to the specific information required of the data set.

Analysis

Descriptive Analysis

One-way descriptive analyses of the data were conducted to obtain frequency distribution of student demographics by population totals, institutional totals, and remedial placement group totals. Where applicable, group mean, median, mode, and standard deviation were noted. All figures can be found on Tables 1-19 in the Appendix. Several trends can be observed.

Of the 6,117 remedial students in this study, 3,448 (56.4%) were enrolled in the four institutions with compulsory remedial writing placement while 2,669 (43.6%) were enrolled in the six voluntary placement institutions. Generally, although institutional and group differences were found, student demographics for the remedial population closely matched those found in past studies. The population was characterized as being younger, over-represented by minorities, more likely to have attended on a full-time basis, marginal in academic achievement as measured by high school GPA and English grade, and more dependent on financial aid than the general community college population.

In addition, 489 students were identified as constituting a "voluntary nonenrolled" group. This group was comprised of students enrolled in college credit courses, but eligible for remediation by virture of their scores on standardized tests of writing ability. Descriptive characteristics for this third group showed that these students were more likely to be males, older, white, attending half or part-time, and entering college with better high school grade point averages, but lower English grades when compared to remedial students in the "compulsory" and "voluntary groups".

Bivariate Analysis

The research model suggested that selected student demographic characteristics influence academic achievement in direct two-way relationships. Likewise, institutional remedial placement policies also have the same two-way effect. To examine two-way relationships, categorical variables were established for the data set and the chi square test for statisticsal significance utilized as the method of analysis. The chi square statistic and contingency coefficient (measure of association) are reported.

Many studies have been conducted to determine the effect of selected student traits on student particpation and educational achievement (Cross, 1971 and 1976; Roueche and Kirk, 1973; Roueche, 1977; Friedlander, 1980 and 1981). To obtain insight regarding the effect that multiple predictors have on a particular outcome requires the application of multivariate statistical techniques that allow for the examination of how each predictor affects a selected dependent variable when simultaneously accounting for the effects of the other predictors.

Multivariate Analyses

The multivariate analysis techniques used to examine the relationship between the dependent academic achievement variables and predictor student

demographic characteristics and remedial placement policies variables were the Multiple Classification Analysis (MCA) and Multivariate Nominal Scale Analyses (MNA). MCA is appropriate for internally sealed or dichotomous dependent variables and provided the primary statistical tool. MNA was utilized as a secondary method for strictly nominally scaled dependent variables.

MCA is a technique used to examine the interrelationships between several predictors and a dependent variable within the context of an additive model. "The statistics show how each predictor relates to the dependent variable, both before and after adjusting for the effects of the other predictors." The strength of the relationship between a dependent variable and all predictors considered together is measured by compiling a multiple correlation coefficient.

Likewise, the MNA statistical test examines how a dependent variable is affected by a set of independent variables. It shows how well the independent variables explain variability in the dependent variable; the relationship of a particular predictor to the dependent variable after statistically holding constant all other predictors; and the marginal usefulness of a particular predictor in explaining the dependent variable over and above what all other predictors can explain. Unlike MCA, MNA does not assume interval measurement of the dependent variable. MNA is designed to handle problems where the dependent variables are nominally scaled and it also assumes an additive model (Andrew, Morgann, and Sonquist, 1967; Andrews and Messenger, 1973).

The multivariate analysis followed two steps. First, all of the student ascriptive/demographic and remedial placement variables were grouped together in a separate analysis of their relationship to each of the dependent variables. Then, beginning with the college-level English course grade as a measure of academic achievement, selected achievement variables (e.g. remedial

writing course grade) were included as predictors with the demographic and remedial placement variables. This test was conducted not only to provide some comparison data between the independent variables but also to gain some understanding of the effects of initial college performance on subsequent long-term college achievement.

Results

Results from the bivariate analyses will first be presented followed by the findings related to the multivariate analyses.

Bivariate Relationship between Student Demographic Characteristics and Academic Achievement

Each student demographic variable was matched to the six academic achievement variables for all students in the voluntary enrollment and compulsory remedial writing placement groups. Figures for the chi square statistics are presented in Tables 20-25 in the Appendix. An important characteristic should be noted in the analysis. The power of the statistical tests results in a proclivity to show significance due to the large "N" found in the data set. Therefore, it is important that interpretation of results be accomplished in a judicious manner accounting for this factor and to distinguish between the concepts of statistical significance and educational importance.

Of the nine student demographic variables identified in this study, the high school GPA, high school English grade, and ethnic/race variables consistently are demonstrated as important factors in determining remedial student achievement measured by the six academic achievement variables. Students who earned a high school GPA of 2.50 or higher were for more likely

to earn high grades in both the remedial writing and college composition course, have a higher college GPA, earn more credits, and complete an associate degree or certificate. Similar patterns of achievement were demonstrated by students who earned an "A" or "B" grade in their final high school English course, though to a lesser extent since these students had less than college-level writing skills upon matriculation into the community college.

Conversely, minority student achievement was consistently low compared to that of their white student counterparts, with the possible exception of Asian Americans who constitute only a fraction of the population. For none of the six academic achievement variables did minority student achievement exceed that of white students, though differences narrowed when examining long-term achievement related to the number of courses completed during and after enrollment in a remedial writing course, total credits earned, and degree/certification completion. This finding suggests that the attrition rate for minorities, especially Blacks students, is very high during the first year of college. However, the data also suggests minority students who persist past the first year (or earn at least 30 credits) perform nearly as well as the white students.

Several other important findings were also observed. A number of variables fluctuated in value as important predictors of achievement. Initially, females were more likely to earn higher writing grades and to have a higher college GPA than males. Gender, however, was neither statistically significant or educationally critical when analyzing the three long-term achievement variables.

The opposite was true of the student status variable. Although statistical significance was .05 for the short-term achievement variables, the

contingency coefficient for student status was relatively low comparatively. This situation changed when examining the results of the long-term achievement variables. Students who were enrolled full-time were more likely to complete a large number of courses during and after enrollment in a remedial writing course, to earn more credits, and to complete requirements for a degree or certificate.

The age variable also demonstrated significance throughout the bivariate analyses, though in a different manner. Adult students--stuvents over 22 years of age--performed better than traditional college age students on short-term measures of achievement but fell below tranditional students on long-term measures of achievement. Upon closer inspection, these findings closely mirror those of the student status variable. Not surprisingly, when separate analses were completed of the age and student status variables the results showed that the traditional college student was far more likely to enroll full-time than the adult student (.001 level; con. coeff. = .32). A strong relationship was demonstrated between the student status and age variables.

The remaining three demographic variables also demonstrated definite achievement patterns which may be a characteristic rather than a cause of achievement. For example, the data showed that students who received financial aid were less likely to perform academically as well as non-aid students. However, most of the students receiving financial aid were minorities (over 60%) and it was already shown that minority achievement levels for the six academic achievement measures were generally lower than the entire remedial population. Likewise, the residence variable showed that academic performance of "in-district" students exceeded that of "out-of-district" students. Yet, the vast majority of Community College Two Students

(72%), a predominantly black institution with the largest remedial group represented in this study, were classified as "out-of-district". Again, the achievement level of minority students appeared to be more significant factor than residence status.

One of the most important features exhibited by the student demographic variables was the relative decline in their predictive value in the progression from short-term to long-term measures of academic achievement. The impact of these independent variables generally was more powerful in predicting student achievment related to writing courses outcomes produced early in a college career, than in affecting total credits earned or degree/certification completion produced over many semesters of enrollment. This trend suggests that other factors may became significant when students continue enrollment beyond the first semester of study.

Bivariate Relationship between Remedial Placement Policy Academic Achievement

Results from the analyses not only helped determine whether compulsory or voluntary remedial placement students exhibited different levels of long-term achievement (i.e., acquisition of a degree or certificate), but also whether enrollment in a remedial course made a difference in short-term performance (i.e., grades). Figures derived from Chi Square analyses can be found on Table 26 in the Appendix.

Students attending institutions with a voluntary enrollment program achieved higher grades in both the remedial writing and college-level composition course than students attending institutions with a compulsory placement program. "Compulsory" students increased their percentage share of A and B grades in the college-level composition course even though this figure

falls short of their proportional representation in the overall remedial population. Surprisingly, the results from the voluntary non-enrolled group were mixed in regard to college-level composition performance. The largest number of students fell in the "C" grade category with a good number of students earning "B" grades. They were, however, overrepresented in the "E/F" grade category as expected and underrepresented in the the "A" grade category. The voluntary, non-enrolled students who earned either an "A", "B", or "C" grades in college composition present a real concern to community colleges. These students were assessed as having deficiencies in college-level writing skills and recommended for placement in remedial writing yet they performed adequately in the college composition course without the benefit of remediation. Perhaps the asessment instrument was not valid or academic requirements in the college-level composition course were less than college level. In either case, questions regarding competence and credibility must be addressed. For the students: Are they actually performing at the college level in the regular composition course? For the colleges: What exactly is the expected level of performance in the regular composition course and do students possess these skills after completing the college-level course?

Similar to the effects found with the student demographic variable, the predictive power of the remedial placement variable declined over multiple semesters. Voluntary students were more likely to earn a 2.50 college GPA than either the compulsory or voluntary nonenrolled groups. But the differences between the voluntary and compulsory groups were marginal. Again, the voluntary nonenrolled results were mixed. These students were proportionally more likely to be in either in the 3.00 or greater GPA category or on academic probation (less than a 2.00 GPA). The apparent ability of some

students in the voluntary nonenrolled group to perform adequately in college-level composition courses prevented the unqualified assertion that this group was the least successful academically. However, almost one-half (232/489 or 47%) of these students were on academic probation which suggests that the long-term educational goals of many were not met in the absence of remediation.

While the results from the voluntary nonenrolled group were mixed for the three short-term measures of academic achievement, this was not the case when analyzing the three long-term achievement measures. The achievement patterns of voluntary nonenrolled students fell below that of both the compulsory and voluntary remedial student groups in the number of courses completed (during and following college composition enrollment, total credits earned, and the number of associate degrees or certificates awarded. Although many voluntary nonenrolled students performed well academically, a manifested tendency of nonpersistence in courses and curricula was exhibited. While nonenrollment in the remedial course may have hindered long-term achievement, a cogent argument could be advanced that the low representation of traditional college age students (17-22 years) in this group may have been a more important factor. This issue will be examined in the discussion of results obtained in the multivariate analysis.

The compulsory and voluntary student groups exhibited different patterns of achievement for long-term measures of academic success. Consistently, compulsory students outperformed voluntary students but again the differences were not the same for each of the achievement measures. While voluntary remedial students were likely to persist and complete up to ten courses, the compulsory group was the only group to exceed their proportional representation for advanced categories of course completion beginning with

11-15 courses completed. While short-term achievement for the compulsory student group generally fell below that of the voluntary group, it appears that the compulsory remedial placement policy may be more effective in sorting out persisting from non-persisting students. Students in the compulsory group who completed one year of study or 30 credit hours were more likely to remain in college, even though the attrition rate for the compulsory group was higher than the voluntary group within the first semester of matriculation.

Similar to the three short-term measures of academic achievement, the differences between compulsory and voluntary groups narrowed with each succeeding long-term achievement measure. Just as the compulsory students closed the achievement gap in the progression from remedial writing to college English to college GPA, so too did the voluntary students close the gap in the progression from the number of courses completed to total credits earned. At the point of analysis of the number of academic degrees and certificates earned only a marginal difference existed between the groups. These results suggest many voluntary students may delay enrollment in the remdial writing course upon matriculation in the community college. While voluntary students did improve their performance in the progression from the number of courses completed to the degree achievement measure, at no time did they exceed the achievement levels of the compulsory group for any of the long-term dependent variables.

Bivariate Relationship between Placement Policy and Student Demographics

Students generally do not select one community college over another based solely on the remedial placement policy in effect. Aside from the value of understanding the types of students the remedial programs are serving in the ten community colleges, analysis of the relationship between student

characteristics and placement policy may be important if it is determined that a specific remedial placement policy is more effective in achieving the desired outcome for a given student population. Results from the Chi Square analyses can be found on Table 27 in the Appendix.

Generally, the voluntary nonenrolled group included a greater proportion of males than either the compulsory or voluntary remedial groups. Males were more likely to avoid the recommended remedial writing course, an educationally important distinction given their generally lower academic achievement level the three short-term achievement measures. In addition, voluntary nonenrolled students were more apt to be older (over 22 years old), partially accounting for their higher proportion in the part-time enrollment category when compared to the other two groups. On the other hand, compulsory remediation students were more likely to be minority, weaker academically as measured by high school (GPA), and have a greater dependence on financial aid than either the voluntary or the voluntary nonenrolled students. The residence and educational level variables, while statistically significant, were not deemed to be educationally valuable predictors.

In summary, the remedial placement programs did not serve student bodies similar in demographic characteristics. Each group showed demographic differences, some marked, which indicated placement policy may have had an effect on determining who did or did not participate in the remedial programs. While differences existed, no causality should be inferred. Remedial placement policies simply are not viewed as an important factor for students when choosing a community college. Rather, these findings may be educationally valuable for community colleges when evaluating their remedial programs and services. This is especially true when assessing not only the characteristics of remedial students participating, but also those students

who could benefit from remedial assistance but fail to utilize the courses and services available

Multivariate Analysis

Relationship of Student Demographic Characteristics and Remedial Placement Policy to Academic Achievement

The analysis concludes by examining the multiple effects of student demographic characteristics and remedial placement policies on academic achievement. In review, the bivariate analyses disclosed the following results: (1) student demographic characteristics did have an effect on academic achievement; (2) remedial placement programs did elicit variation among students in academic achievement; and (3) remedial placement programs did serve different types of students. These findings provide the basis for analysis of the primary research question: Do institutional remedial placement policies have a significant impact on academic achievement when accounting for selected student demographic characteristics?

The multivariate analysis was conducted utilizing the academic achievement variables in chronological sequence. For example, an initial test was completed relating all demographic and remedial placement variables to the college English outcome. Then a second analysis was conducted adding in the remedial writing course grade as an independent variable. The results of the second statistical test provided a valuable comparison between institutional factors and demographic characteristics and their effect on student academic achievement. For each test, cases with missing data for the dependent variables were deleted from the analysis.

The results of the Multiple Classification Analysis (MCA) for the remedial writing course outcome showed that demographic characteristics such as ethnic/racial background, age, sex, and high school achievement were the strongest predictors. This followed closely the results of the Chi Square analyses. Remedial placement policy was not an important variable in the determination of remedial writing achievement as its beta value placed it in ninth position out of ten predictors. It appears that regardless of the placement policy in effect, adult white students (over 22 years of age) with a good record of prior educational achievement, performed equally well in either a compulsory or voluntary remedial placement program. The Multivariate Nominal Scale Analysis revealed similar findings.

The most noteworthy aspect of this analysis was not identification of the best predictors for remedial writing course outcome. Rather, the small amount of the variance explained by the set of student demographic and remedial placement variables (R^2 unadjusted = .19) appears to be the most important find. Clearly, other factors beside the selected independent variables played an important role when accounting for student performance for this particular outcome. Statistical summaries for these analyses can be found on Table 28 in the Appendix.

Results for the college-level English composition course and college GPA also exhibited patterns similar to those found in the remedial writing course analysis. In both cases, ethnic/racial background, age, and high school achievement surfaced as the strongest predictors among the selected independent variables. Moreover, the remedial placement policy continued to play a minor role in affecting the three short-term achievement measures. An important characteristic was the declining importance of the ten predictors as measured by the unadjusted R^2 value. Utilizing the results of the bivariate

analyses as a point of reference, the multivariate results indicated that adult white students who were high school graduates with good high school performance record were more likely to do well in the college composition course and to earn a higher college GPA. Again, because the ten predictors explained such a small amount of the overall variance, a second analysis of college composition and college GPA was completed incorporating institutionally related achievement variables. As such, the remedial writing course outcome was included as a predictor for the college composition test and both writing courses were added in the follow-up analysis for the college GPA variable.

The resulting data did reveal that the college achievement variables were more effective predictors of college English and college GPA than either the student demographic or remedial placement policy variables. For example, the amount of explained variance (unadjusted R^2) for the college GPA outcome increased from 17%, with the original ten predictors, to nearly 43% when the remedial and college composition variables were included as independent variables. Likewise, the remedial writing course, when added as a predictor to college composition, was a more effective predictor than any of the ten independent variables. Students earning a high grade in the writing courses were far more likely to have a strong college GPA <u>regardless</u> of their demographic characteristics or the remedial placement policy employed by their institution of enrollment. Factors such as student adacemic achievement <u>within</u> the community college setting have a greater impact on academic achievement for these short-term measures in contrast to variables external to the institution.

It is also necessary to examine what the college GPA outcome reflects in order to gain an understanding of the statistics produced. Since the

particular dependent variable gauged the overall quality of academic achievement, it may have been expected that the remedial placement policy variable would have had a greater influence. While college GPA can measure long-term attainment, it cannot be inferred from this indicator that students persisted over many semesters. College GPA is also computed for students attending only one semester. The descriptive analysis revealed that a large number of remedial students earned 19 or less credit hours (2,597 of 6,605 of 39.3%). The college GPA for many students paralleled their short-term achievement in the remedial writing and the college composition courses more closely than it did for the other three dependent variables. The results from the three long-term achievement measures from the college composition and college GPA analyses can be found in Tables 29 and 30 in the Appendix.

Whereas remedial placement policy did not play a vital role in the first three analyses, it moved to the forefront when predicting both the number of courses completed and the total credit hours earned. The student academic course load variable (student status) also became an important factor. Full-time students enrolled in remedial writing, especially those in a compulsory placement program, completed more courses and earned more credit hours than students who did not participate in remediation. Also, high school achievement once again influenced long-term achievement, but to a lesser extent and traditional college-age students were more apt to persist, although it appears that this factor has more to do with their overall tendency to enroll full-time. Even when the three short-term achievement measures were added as predictors, both the remedial placement and student status variables held as strong predictive measures, surpassing even the remedial writing course in predictive capacity. It is important to note the large increase in the unadjusted R^2 figures when the college achievement variables are

included in the analysis. The amount of explained variance rose from 19% to 49% for the number of courses completed and from 17% to 52% for the total credits earned variables. While both student status and remedial placement policy surfaced as important factors among the original ten predictors, these results reaffirm the critical importance of college induced factors as a determinant of academic achievement both in terms of short-term course retention and long-term institutional persistence. As it relates to the remedial placement policy variable, these findings suggest that voluntary nonenrolled students generally were not long-term persisters though their decision not to select the recommended remedial writing course was determined not to be the most crucial factor.

Further elaboration regarding the ethnic/racial background variable should be made. While this predictor variable remained fairly consistent throughout the analysis when matched against the other nine student demographic and remedial placement variables, this was not the case when tested in relationship to the academic achievement variables. The bivariate analysis pointed out that hite students earned more credits than minorities. However, meaningful conclusions regarding minority academic achievement cannot be drawn solely on the basis of bivariate analyses. While minority attrition was greater than that of white students, especially during the first year of college attendance (Less than 31 credits), the retention rate for minorities, in particular black students, remained fairly stable once 31 or more credits were earned. Those who did or could not remain in college tended to leave early in the academic career. Conversely, the persistence rate for minorities who continued past the first year stabilized to the extent that it closely matched those of their white counterparts. In addition, programs with the compulsory remedial placement policy appeared to abet the "sorting out" process more quickly than

the voluntary placement program. The low eta-squared value of the ethnic/racial variable (in the MCA analysis) initially cast doubts regarding its predictive importance when the three institutional outcomes were included as predictors. Subsequent statistical tests confirmed this (see Tables 31 and 32 in the Appendix).

The final analysis examined the degree/certification variable. Results for the first five achievement measures indicated that while the student demographic variables did influence student achievement, their impact did not match those of the three institutionally related achievement outcomes when they were added as predictors. Also, student demographics generally waned in their predictive value when testing indicators measured achievement over multiple semesters. While the remedial placement policy variable played an increasingly significant role in determining long-term academic achievement, with particular emphasis on compulsory programs, again, it did not exhibit the same strength as found in the remedial writing, college composition and college GPA measures.

Student status, high school achievement, and remedial placement were the best predictors of the degree/certification completion variable. Students attending full-time with a strong record of prior academic achievement, and who enrolled in a remedial writing course, especially those in compulsory programs, were more likely to have earned an associate degree or certificate (see Table 33 in the Appendix). However, the remedial placement variable did show a decline in its predictive value as measured by its beta value. Most students who earned 60 or more credits did graduate, regardless of the type of placement policy and this may partially account for the decline. Similar to the previous analyses, however, the predictive value of the original ten independent variables declined. The unadjusted R value amounted to less than

8%. Even when the three short-term variables were added as predictors, the amount of variance explained rose no higher than 28%.

Clearly, these findings indicate that student demographic characteristics have only a minor influence on degree/certificate completion--the outcome viewed by many as the ultimate goal of community college attendance and as a measure of college effectiveness. Success in the college writing courses and a strong college GPA does not automatically mean that a degree or certificate has been earned. Throughout the review of the multivariate analysis results, one major trend became apparent: no single variable accounted for profound differences in remedial student academic achievement. The close inter-relationship of many predictors acting upon and with each other served to produce variations in academic achievement.

Conclusions and Discussion

Conclusions derived from the bivariate analysis of data provide insight into the academic achievement of remedial students, but more importantly, grouped data provide a sound basis for comprehensive understanding of the effect of selected predictors on academic achievement.

Student Demographic Characteristics and Academic Achievement

Probably the most important result stemming from examination of the relationship between student demographic characteristics and academic achievement was that academic achievement levels for students with different ascriptive/demographic backgrounds did vary. This, in itself, should not be startling since the study replicated past research employing a similar approach to analysis (e.g. Cross, 1971; Astin, 1976; Roveche & Snow, 1977;

Friedlander, 1981). The significance of this finding rests not with the fact that differences may or may not have occurred, but with the shifting impact of various demographic variables in determining student achievement. For example, the age variable remained a relatively strong predictor throughout the analyses. However, when adult students over 22 years of age achieved higher grades in the writing courses, they were less apt to persist in college. The sex variable can also be used to cite another example of shifting impact. While sex showed initial importance as a predictor of short-term achievement, it proved to be insignificant as a predictor of long-term achievement. The opposite was true of the student status variable.

Generally, no uniformity was disclosed among the student demographic predictors when evaluating their effect on the six academic achievement measures. Results from the analyses indicated that while student demographic characteristics were important factors to consider when assessing academic achievement, the impact of these variables declined over time. The results support the contention that academic achievement was not predicted solely or even significantly on the basis of student demographics. Rather, other factors, both within and outside of the community college, can and do have a profound effect on student achievement over one semester and a growing influence, particularly as it relates to retention, over multiple sesesters.

Remedial Placement Policy and Academic Achievement

Little is known regarding the impact of remedial placement policy on academic achievement. The bivariate analysis of these two sets of variables served several purposes. It provided a framework to investigate whether there were differences in the academic achievement levels of students in the two placement groups. Does compulsory placement in remedial writing enhance

student achievement in contrast to achievement associated with voluntary placement. It also furnished the data required for assessment of the relationship remedial placement policy and academic achievement while accounting for selected student demographics in the multivariate analysis.

While the bivariate analysis revealed that differences were exhibited, it was impossible to state that one remedial placement policy was clearly more effective than the other. Students in voluntary programs tended to exhibit higher achievement for the three short-term measures (remedial and college-level writing course grades and college GPA) - while those in the compulsory programs were more likely to be persisters and to perform effectively on those measures identified as long-term outcomes. Although the attrition rate was very high for both groups after the first semester, the compulsory remedial program appeared to have been more effective in sorting out persisters. Students under this placement policy, who continued study past the first year, were more likely than their counterparts in the voluntary program to achieve greater long-term success. But differences between the compulsory and voluntary remedial groups declined from the number of courses completed to the total credits earned until the degree/certification completion outcome registered only marginal variations. Likewise, a similar pattern occurred among the short-term academic achievement measures as voluntary students initially earned higher grades but the differences narrowed (between the two groups) when examining the college English and college GPA outcomes.

For no measure of academic achievement did the voluntary non-enrolled students exceed the achievement levels of remedial writing students. Perhaps the most critical finding in this regard was not the differences in the long-term measures, but the near parallel results for the short-term measures

between the remedial writing and the non-writing groups. Of particular importance were the results which showed that the voluntary non-enrolled group achieved proportionally the same grades in the college-level English course as did the entire remedial writing population. Furthermore, their achievement for this outcome even exceeded those of the remedial writing students when comparisons were made on an institution-by-institution basis instead of utilizing the aggregate figure for the remedial population.

Such findings should be a source of consternation among community college educators and administrators. At best, the reliability and validity of the writing assessment instrument should be questioned. Of critical concern is the actual expectations and performance demands of these so-called "college-level" writing courses. Are the beginning college-level writing courses taught at the level of those students entering college or do they adhere to strict standards of paragraphing, sentence structure, punctuation, etc. expected of college students. The data suggest that content for some, if not most, of these college English courses may be "watered down" to varying degrees. Indeed, it is probable that this phenomenon is occurring in a number of community colleges throughout the country and not simply those included in the study.

Student Demographic Characteristics and Remedial Placement Policy

It is important to stress that high minority enrollment alone was probably not the major consideration for those community colleges who administered a compulsory placement policy. Indeed, the community college with the second largest minority enrollment, both in terms of number and percentage of minority students had a voluntary policy. In addition, given the observation that minority students generally require remedial assistance more than their white counterparts, the data suggest that the composition of the student body

plays a minor role in determining remedial placement policy. No cause-effect relationship can be implied when discussing student choice of a community college and the effect of remedial placement policy on choice.

Relationship of Student Demographic Characteristics and Remedial Placement Policy to Academic Achievement

While the bivariate analyses were crucial in obtaining an understanding of two-way relationships exist between the variables, the multivariate statistics and the resulting data provide a comprehensive picture. Three important findings emerged from the MCA analyses. First, remedial placement policy was not a critical factor in determining any of the three short-term academic achievement measures but it became more significant as a determinant of long-term achievement. Adult, white students with a good record of high school achievement generally exhibit the strongest performance in terms of the remedial writing, college English, and college GPA outcomes. Remedial placement policy had little effect as the composite of a successful student for these short-term measures held true for those in either a voluntary or compulsory program.

However, for the three long-term measures of academic achievement, the impact of remedial placement became significantly more important. While compulsory remedial students demonstrated a tendency to outperform students in voluntary programs, differences were found between students enrolled for remediation versus those who did not. The data showed that adult students, regardless of their initial success in remedial writing or college English, either dropped out or did not maintain their generally high achievement levels over time. An equally important factor was the student status (course load) variable. Full-time students were more apt to stay in college for a longer

period of time. Traditional college age students were more likely to attend full time whereas the opposite was true for adult students. Thus, any conclusions regarding long-term achievement of remedial students must account for the vital factors of age and enrollment status.

One finding from the multivariate analysis was the relatively low amount of variance explained by both the student demographic characteristics variable and the remedial placement variable. The MCA analyses showed that the unadjusted R^2 value--the amount of variance in the dependent variable which can be accounted for by the predictors--never rose higher than 20 percent for all of the demographic and remedial placement variables. The original 10 predictors had their greatest impact on the remedial writing course variable but overall impact saw a decline during individual assessment of the other achievement measures. When the degree/certification variable was analyzed, less than 8% of the total variance was explained.

These findings clearly indicate the selected student demographic and remedial placement policy predictors <u>are not</u> the most important variables in explaining academic achievement. Although the statistical analyses did suggest that students with certain characteristics are more likely to succeed in their course work and have a higher level of performance than other students, the predictors used in this study were not the primary reason for this trend. Rather, other factors, both within and outside of the community college, have had a greater affect on student achievement. To assess some of these variables, the three short-term achievement measures were included as predictors in separate analyses of the three long-term outcomes.

Another important finding of the multivariate analysis was remedial student academic achievement <u>within</u> the community college was much more critical to overall college performance and retention than either the

demographic or placement factors. For example, the amount of variance explained rose from under 17 percent when the original ten predictors were used to assess college GPA to nearly 43 percent when the remedial and college writing variables were added as a predictor. Similar results were also found with the three long-term outcomes achievement measures when remedial writing, college English, and college GPA were included as predictors.

The major finding from the analysis denotes the critical impact community colleges with different academic placement policies have on student achievement, regardless of the background or prior record of each student. Did institutional remedial placement policy have an effect on student achievement? Students in the three remedial groups did show differences and remedial placement policy did have an effect on the three long-term outcomes. Students enrolled in institutions with compulsory remedial placement policies generally outperformed those in the voluntary programs, but the bivariate analyses revealed that the differences were not extreme although a convincing argument could be made for the merits of compulsory remedial placement in improving student retention. Students completing a remedial writing course exceeded the achievement levels of those eligible for but not enrolled in remedial courses as measured by long-term achievement measures. In this regard, remedial placement was a significant factor.

Finally, it is important to indicate none of the of the remedial placement policies employed by community colleges were effective in lowering student attrition. Over half of all students enrolled in institutions with different placement policies withdrew from college prior to the completion of 30 credit hours. Probably none of the aforementioned characteristics are as educationally meaningful as the findings which disclosed the significance of institutionally related factors in determining student academic achievement.

Remedial student academic performance in community colleges had a greater effect on student achievement than either student demographics or remedial placement policy. The methods which can be employed by community colleges to enhance student learning and motivation, especially during the first semester of study, has a direct and profound effect on student achievement and retention.

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APPENDIX

Table 1

Institutional Characteristic - By Sex

Institution	01	02	03	04	05	06	07	08	09	10
Sex										
Total (N=6117)	1005	1297	433	347	713	608	735	218	479	282
Males=3237	579	532	258	143	440	290	460	127	298	110
52.9%	57.6%	41.0%	59.6%	41.2%	61.7%	47.7%	62.6%	58.3%	62.2%	39.0%
Females=2880	426	765	175	204	273	318	275	91	181	172
47.1%	42.4%	59.0%	40.4%	58.8%	38.3%	52.3%	37.4%	41.7%	37.8%	61.0%

Table 2

Institutional Characteristic - By Age

Institution	01	02	03	04	05	06	07	08	09	10
Age										
Total (N=6117)	1005	1297	433	347	713	608	735	218	479	282
LT 20yrs-3158	709	485	225	166	310	290	555	137	188	93
51.6%	70.5%	37.4%	52.0%	47.8%	43.5%	47.7%	75.5%	62.9%	39.2%	33.0%
20-22yrs-1121	136	318	53	52	140	107	106	39	121	49
18.3%	13.5%	24.5%	12.2%	15.0%	19.6%	17.6%	14.4%	17.9%	25.3%	17.4%
23-25yrs-602	79	125	48	34	94	66	35	19	59	43
9.9%	7.9%	9.6%	11.1%	9.8%	13.2%	10.9%	4.8%	8.7%	12.3%	15.2%
26-29yrs-442	40	129	45	34	54	41	17	10	40	32
7.2%	4.0%	10.0%	10.4%	9.8%	7.6%	6.7%	2.3%	4.6%	8.4%	11.3%
30-39yrs-541	34	164	39	39	75	75	19	4	48	44
8.8%	3.4%	12.6%	9.0%	11.2%	10.5%	12.3%	2.6%	1.8%	10.0%	15.6%
GT39yrs-237	7	76	16	22	38	29	3	9	19	18
3.9%	.7%	5.9%	3.7%	6.4%	5.3%	4.8%	.4%	4.1%	4.0%	6.4%
N.A.*-16	0	0	7	0	2	0	0	0	4	3
.3%	0%	0%	1.6%	0%	.3%	0%	0%	0%	.8%	1.1%

* NA = Not Available
Mean = 22.4 years
Median = 19 years
ST. Dev. = 6.96 years

Table 3

Institutional Characteristic - By Ethnic/Race

Institution	01	02	03	04	05	06	07	08	09	10
Ethnic/Race										
Total (N=6117)	1005	1297	433	347	713	608	735	218	479	282
Am. Ind.=16	0	0	3	4	5	0	1	0	2	1
.3%	0	0	.7%	1.2%	.7%	0	.1%	0	.4%	.3%
Asians=79	3	1	6	4	18	10	11	3	16	7
1.3%	.3%	.1%	1.4%	1.2%	2.5%	1.7%	1.5%	1.4%	3.3%	2.5%
Blacks=2034	179	1251	62	55	31	244	102	24	19	67
33.2%	17.8%	96.5%	14.3%	15.8%	4.3%	40.1%	13.9%	11.0%	4.0%	23.8%
Caucas.=3831	790	41	351	279	619	346	588	178	440	199
62.6%	78.6%	3.1%	81.1%	80.4%	86.8%	56.9%	80.0%	81.6%	91.9%	70.6%
Hispan.=85	17	3	8	5	8	8	28	3	1	4
1.4%	1.7%	.2%	1.8%	1.4%	1.7%	1.3%	3.8%	1.4%	.2%	1.4%
Other=72	16	1	3	0	32	0	5	10	1	4
1.2%	1.6%	.1%	.7%	0	4.5%	0	.7%	4.6%	.2%	1.4%

Table 4

Institutional Characteristic - By Residence

Institution	01	02	03	04	05	06	07	08	09	10
Residence										
Total (N=6117)	1005	1297	433	347	713	608	735	218	479	282
In-Dist.-3792	272	355	335	279	589	550	630	174	382	226
62.0%	27.1%	27.4%	77.4%	80.4%	82.6%	90.5%	85.7%	79.8%	79.7%	80.1%
Out-Dist.=2325	733	942	98	68	124	58	105	44	97	56
38.0%	72.9%	72.6%	22.6%	19.6%	17.4%	9.5%	14.3%	20.2%	20.3%	19.9%

Table 5

Institutional Characteristic - By Student Status

Institution	01	02	03	04	05	06	07	08	09	10
Student Status										
Total (N=6117)	1005	1297	433	347	713	608	734	218	479	282
GE 12crds=3261	567	722	250	211	273	305	457	148	167	161
53.3%	56.4%	55.7%	57.7%	60.8%	38.3%	50.2%	62.1%	67.9%	34.9%	57.1%
6-11 crds=2264	390	435	157	81	336	255	235	60	216	99
37.0%	38.8%	33.5%	36.3%	23.3%	47.1%	41.9%	32.0%	27.5%	45.1%	35.1%
1-5 crds=592	48	140	26	55	104	48	43	10	96	22
9.7%	4.8%	10.8%	6.0%	15.9%	14.6%	7.9%	5.9%	4.6%	20.0%	7.8%

Table 6

Institutional Characteristic- By Educational Level

Institution	01	02	03	04	05	06	07	08	09	10
Ed. Level										
Total (N=6117)	1005	1297	433	347	713	608	735	218	479	282
HS Dipl.=5381	955	999	364	326	652	513	703	192	438	245
88.1%	95.0%	77.0%	84.1%	93.9%	91.4%	84.4%	95.6%	88.0%	91.4%	86.9%
GED=357	29	200	17	12	10	46	10	15	7	11
5.8%	2.9%	15.4%	3.9%	3.5%	1.4%	7.6%	1.4%	6.9%	1.5%	3.9%
No HS Equ.=206	6	67	14	8	41	16	10	3	31	10
3.4%	.6%	5.2%	3.2%	2.3%	5.8%	2.6%	1.4%	1.4%	6.5%	3.5%
Unknown=167	15	31	38	1	10	33	12	8	3	16
2.7%	1.5%	2.4%	8.8%	.3%	1.4%	5.4%	1.6%	3.7%	.6%	5.7%

Table 7

Institutional Characteristic - By High School Grade Point Average

Institution	01	02	03	04	05	06	07	08	09	10
HSGPA										
Total (N=2538)	772	584	206	74	NA*	192	481	136	40	53
41.5% of total 6117										
GE 3.00=177	63	9	21	8		16	33	14	7	6
7.0%	8.2%	1.5%	10.2%	10.8%		8.3%	6.8%	10.3%	17.5%	11.3%
2.50-2.99=597	230	52	67	26		53	110	28	10	21
23.5%	29.8%	8.9%	32.5%	35.1%		27.6%	22.9%	20.6%	25.0%	39.6%
2.00-2.49=929	289	193	84	31		57	187	56	12	20
36.6%	37.4%	33.1%	40.8%	41.9%		29.7%	38.9%	41.2%	30.0%	37.8%
LT 2.00=835	190	330	34	9		66	151	38	11	6
32.9%	24.6%	56.5%	16.5%	12.2%		34.4%	31.4%	27.9%	27.5%	11.3%
NA*=3579	233	713	227	273		416	254	82	439	229

*NA= Not Available

Table 8

Institutional Characteristic - By High School English Grade

Institution	01	02	03	04	05	06	07	08	09	10
HS English										
Total (N=2459)	770	584	206	73	NA*	189	410	135	40	52
40.2% of total 6117										
A=89	34	20	5	4		5	12	6	0	3
3.6%	4.4%	3.4%	2.4%	5.5%		2.6%	2.9%	4.4%	0	5.8%
B=510	188	105	44	19		27	78	24	10	15
20.7%	24.4%	18.0%	21.4%	26.0%		14.3%	19.0%	17.8%	25.0%	28.8%
C=1037	335	237	79	34		78	171	61	19	23
42.2%	43.5%	40.6%	38.4%	46.6%		41.3%	41.7%	45.2%	47.5%	44.2%
D=698	187	189	66	14		66	120	38	10	8
28.4%	24.3%	32.4%	32.0%	19.2%		34.9%	29.3%	28.2%	25.0%	15.9%
E/F=125	26	33	12	2		13	29	6	1	3
5.1%	3.4%	5.6%	5.8%	2.7%		6.9%	7.1%	4.4%	2.5%	5.8%
NA*=3658	235	713	227	274		419	325	83	439	230

*NA=Not Available

Table 9

Institutional Characteristic - By Financial Aid

Institution	01	02	03	04	05	06	07	08	09	10
Fin. Aid.										
Total (N=6117)	1005	1297	433	347	713	608	735	218	479	282
F.A. Award=1858	214	841	152	77	71	240	62	72	42	87
30.4%	21.3%	64.8%	35.1%	22.2%	10.0%	39.5%	8.4%	33.0%	8.8%	30.9%
No F.A.=4259	791	456	281	270	642	368	673	146	437	195
69.6%	78.7%	35.2%	64.9%	77.8%	90.0%	60.5%	91.6%	67.0%	91.2%	69.1%

Table 10

Compulsory and Voluntary Remedial Placement Characteristic - By Sex

	Compulsory Placement	Voluntary Placement
Sex		
Total (N=6117)	3448 (56.4%)	2669 (43.6%)
Males=3237	1809	1428
52.9%	52.5%	53.5%
Females=2880	1639	1241
47.1%	47.5%	46.5%

Table 11

Compulsory and Voluntary Remedial Placement Characteristic - By Age

	Compulsory Placement	Voluntary Placement
Age		
Total (N=6101)	3439	2662
LT 20 yrs=3158 51.8%	1729 50.3%	1429 53.7%
20-22 yrs=1121 18.4%	647 18.8%	474 17.8%
23-25 yrs=602 9.9%	346 10.0%	256 9.6%
26-29 yrs=442 7.2%	268 7.8%	174 6.5%
30-39 yrs=541 8.8%	312 9.1%	229 8.6%
GE 40 yrs=237 3.9%	137 4.0%	100 3.8%
Not Available	9	7

Table 12

Compulsory and Voluntary Remedial Placement Characteristic - By Ethnic/Race

	Compulsory Placement	Voluntary Placement
Ethnic/Race		
Total (N=6117)	3448	2669
Am. Ind.=16 .3%	8 .2%	8 .3%
Asian=79 1.3%	28 .8%	51 1.9%
Black=2034 33.2%	1523 44.2%	511 19.1%
Caucasian=3831 62.6%	1801 52.2%	2030 76.1%
Hispanic=85 1.4%	36 1.1%	49 1.8%
Others=72 1.2%	52 1.5%	20 .8%

Table 13

Compulsory and Voluntary Remedial Placement Characteristic - By Residence

	Compulsory Placement	Voluntary Placement
Residence		
Total (N=6117)	3448	2669
In-District=3792	1551	2241
62.0%	45.0%	84.0%
Out-District=2325	1897	428
38.0%	55.0%	16.0%

Table 14

Compulsory and Voluntary Remedial Placement Characteristic - By Student Status

	Compulsory Placement	Voluntary Placement
Student Status		
Total (N=6117)	3448	2669
GE 12 Credits=3261	1812	1449
53.3%	52.6%	54.3%
6-11 Credits=2264	1318	946
37.0%	38.2%	35.4%
1-5 Credits=592	318	274
9.7%	9.2%	10.3%

Table 15

Compulsory and Voluntary Remedial Placement Characteristic - By Educational Level

	Compulsory Placement	Voluntary Placement
Educational Level		
Total (N=6117)	3448	2669
HS Diploma=5387 88.1%	2970 86.2%	2417 90.6%
GED=357 5.8%	256 7.4%	101 3.8%
No HS Equiv.=206 3.4%	128 3.7%	78 2.9%
Unknown=167 2.7%	94 2.7%	73 2.7%

Table 16

Compulsory and Voluntary Remedial Placement Characteristic -

By High School Grade Point Average

	Compulsory Placement	Voluntary Placement
HS GPA		
Total (N=2538)	1562	976
GE 3.00=177 7.0%	93 6.0%	84 8.6%
2.50-2.99=597 23.5%	349 22.3%	248 25.4%
2.00-2.49=929 36.6%	566 36.2%	363 37.2%
LT 2.00=835 32.9%	544 35.5%	281 28.8%
Not Available= 3579	1886	1693

Table 17

Compulsory and Voluntary Remedial Placement Characteristic -

By High School English Grade

	Compulsory Placement	Voluntary Placement
HS English		
Total (N=2459)	1560	899
A= 89 3.6%	59 3.8%	30 3.3%
B=510 20.7%	337 21.6%	173 19.3%
C=1037 42.2%	651 41.7%	386 42.9%
D=698 28.4%	442 28.3%	256 28.5%
E/F=125 5.1%	71 4.6%	54 6.0%
Not Available= 3658	1888	1770

Table 18

Compulsory and Voluntary Remedial Placement Characteristic -
By Financial Aid

	Compulsory Placement	Voluntary Placement
Financial Aid		
Total (N=6117)	3448	2669
Fin. Aid Award=1858	1278	580
30.4%	37.1%	21.7%
No Fin. Aid=4259	2170	2089
69.6%	62.9%	78.3%

Table 19

Voluntary, Non-Enrolled Remedial Students

Selected Demographic Characteristics

1) Sex	2) Age	3) Ethnic/Race
N=489	N=489	N=489
Males=342 69.9%	LT 20 yrs= 193 39.5%	Am.Ind.= 3 .6%
Females=147 31.3%	20-22 yrs= 104 21.3%	Asian= 2 .4%
	23-25 yrs= 62 12.7%	Black= 117 23.9%
	26-29 yrs= 49 10.0%	Caucasian= 362 74.1%
	30-39 yrs= 54 11.0%	Hispanic= 5 1.0%
	GE 40 yrs= 27 5.5%	Others= 0

4) Residence	5) Student Status*	6) Educational Level
N=489	N=216	N=489
In District= 424 86.7%	(44.2% of total 489)	HS Diploma= 428 87.5%
Out District= 65 13.3%	GE 12 Credits= 87 40.3%	GED= 40 8.2%
	6-11 Credits= 105 48.6%	No HS Equiv.= 4 .8%
	1-5 Credits= 24 11.1%	Unknown= 17 3.5%

*During semester of college English enrollment

7) HS GPA

N=157

(32.1% of total 489)

GE 3.00= 12
7.6%

2.50-2.99= 44
28.0%

2.00-2.49= 61
38.9%

LT 2.00= 40
25.5%

Not Available= 332

8) HS English

N=157

(32.1% of total 489)

A= 2
1.3%

B= 30
19.1%

C= 62
39.5%

D= 55
35.0%

E/F= 8
5.1%

Not Available= 332

9) Financial Aid

N=489

Fin.Aid= 133
27.2%

No Fin.Aid= 356
72.8%

Table 20-A

Bivariate Relationship-Student Demographics and Remedial Writing Course Grade

Remedial Writing Course Grade

	Chi Square	Signific. Level	Contingency Coeff.	N	DF
Sex	89.67	.000	.12	6081	8
Age	355.46	.000	.24	6065	40
Ethnic/Race	563.82	.000	.29	6081	40
Residence	323.50	.000	.22	6081	8
Student Status	205.52	.000	.18	6081	16
Educat. Level	108.71	.000	.13	6081	24
HSGPA	262.64	.000	.31	2519	24
HS English	112.85	.000	.21	2440	32
Fin Aid	162.00	.000	.16	6081	8

Table 20-B

Truncated Remedial Writing Course Grade

	Chi Square	Signific. Level	Contingency Coeff.	N	DF
Sex	73.57	.000	.13	4062	4
Age	246.31	.000	.24	4049	20
Ethnic/Race	432.18	.000	.31	4062	20
Residence	254.01	.000	.24	4062	4
Student Status	54.65	.000	.12	4062	8
Educat. Level	64.67	.000	.13	4062	12
HSGPA	188.32	.000	.20	1569	12
HS English	82.84	.000	.23	1504	16
Fin. Aid	90.32	.000	.15	4062	4

Table 21-A

Bivariate Relationship-Student Demographics and College-Level English Course Grade

College English Course Grade

	Chi Square	Signific. Level	Contingency Coeff.	N	DF
Sex	17.29	.016	.07	3402	7
Age	161.36	.000	.21	3395	35
Ethnic/Race	228.33	.000	.25	3402	35
Residence	103.37	.000	.17	3402	7
Student Status	26.90	.020	.09	3402	14
Educat. Level	21.03	.457	.08	3402	21
HSGPA	150.37	.000	.28	1706	21
HS English	96.28	.000	.23	1657	28
Fin. Aid	67.92	.000	.14	3402	7

Table 21-B

Truncated College-Level English Course Grade

	Chi Square	Signific. Level	Contingency Coeff.	N	DF
Sex	13.07	.011	.07	2889	4
Age	121.24	.000	.20	2882	20
Ethnic/Race	193.36	.000	.25	2889	20
Residence	81.53	.000	.17	2889	4
Student Status	19.86	.011	.08	2889	8
Educat. Level	13.53	.332	.07	2889	12
HSGPA	125.63	.000	.28	1493	12
HS English	74.02	.000	.22	1452	16
Fin. Aid	65.02	.000	.15	2889	4

Table 22

Bivariate Relationship-Student Demographics and College Grade Point Average

College Grade Point Average

	Chi Square	Signific. Level	Contingency Coeff.	N	DF
Sex	19.71	.000	.05	6606	3
Age	267.64	.000	.20	6590	15
Ethnic/Race	660.12	.000	.30	6606	15
Residence	87.17	.000	.11	6606	3
Student Status	122.62	.000	.14	6331	6
Educat. Level	111.48	.000	.13	6606	9
HSGPA	432.91	.000	.37	2695	9
HS English	167.22	.000	.25	2616	12
Fin. Aid	123.97	.000	.14	6606	3

Table 23

Bivariate Relationship - Student Demographics and Number of Courses Completed

Number of Courses Completed

	Chi Square	Signific. Level	Contingency Coeff.	N	DF
Sex	8.52	.130	.04	6606	5
Age	322.90	.000	.22	6590	25
Ethnic/Race	117.60	.000	.13	6606	25
Residence	35.60	.000	.07	6606	5
Student Status	564.11	.000	.29	6331	10
Educat. Level	98.55	.000	.12	6606	15
HSGPA	177.07	.000	.25	2695	15
HS English	119.02	.000	.21	2616	20
Fin. Aid	55.86	.000	.09	6606	5

Table 24

Bivariate Relationship - Student Demographics and Total Credit Hours Earned

Total Credit Hours Earned

	Chi Square	Signific. Level	Contingency Coeff.	N	DF
Sex	2.06	.840	.02	6606	5
Age	149.75	.000	.15	6590	25
Ethnic/Race	130.20	.000	.14	6606	25
Residence	24.77	.000	.06	6606	5
Student Status	431.30	.000	.25	6331	10
Educat. Level	124.71	.000	.14	6606	15
HSGPA	173.42	.000	.25	2695	15
HS English	97.69	.000	.19	2616	20
Fin. Aid	18.90	.002	.05	6606	5

Table 25-A

Bivariate Relationship - Student Demographics and Degree/Certification Completion

Degree/Certification Completion (Two Categories)

	Chi Square	Signific. Level	Contingency Coeff.	N	DF
Sex	.19	.662	.01	6606	1
Age	24.33	.000	.06	6590	5
Ethnic/Race	28.16	.000	.07	6606	5
Residence	4.47	.035	.03	6606	1
Student Status	146.75	.000	.15	6331	2
Educat. Level	26.79	.000	.06	6606	3
HSGPA	102.84	.000	.19	2695	3
HS English	64.45	.000	.16	2616	4
Fin. Aid	10.17	.001	.04	6606	1

Table 25-B

Degree/ Certification Completion (Three Categories)

	Chi Square	Signific. Level	Contingency Coeff.	N	DF
Sex	3.87	.144	.02	6606	2
Age	38.52	.000	.08	6590	10
Ethnic/Race	33.37	.000	.07	6606	10
Residence	4.96	.084	.03	6606	2
Student Status	148.87	.000	.15	6331	4
Educat. Level	29.29	.000	.07	6606	6
HSGPA	105.20	.000	.19	2695	6
HS English	68.48	.000	.16	2616	8
Fin. Aid	10.18	.006	.04	6606	2

Table 26

Bivariate Relationship- Remedial Placement Policy and Student Educational Outcomes

Remedial Placement Policy

	Chi Square	Signific. Level	Contingency Coeff.	N	DF
Remedial Writing Grade	222.33	.000	.19	6081	8
Truncated Remedial Grade	162.95	.000	.20	4062	4
College English Grade	97.28	.000	.17	3402	14
Truncated College English	53.66	.000	.14	2889	8
College GPA	68.38	.000	.10	6606	6
Number of Courses Completed	314.07	.000	.21	6606	10
Total Credits Earned	282.75	.000	.20	6606	10
Degree/Certif. (Two Categories)	90.08	.000	.12	6606	2
Degree/Certif. (Three Catergories)	91.15	.000	.12	6606	4

Table 27

Bivariate Relation - Student Demographics and Remedial Placement Policy

Remedial Placement Policy

	Chi Square	Signif. Level	Contingency Coeff.	N	DF
Sex	53.50	.000	.09	6606	2
Age	37.40	.000	.08	6590	10
Ethnic/Race	486.21	.000	.26	6606	10
Residence	1109.90	.000	.38	6606	2
Student Status	20.26	.000	.06	6331	4
Educat. Level	53 79	.000	.09	6606	6
HSGPA	20.87	.002	.09	2695	6
HS English	9.48	.303	.06	2616	8
Fin. Aid	170.17	.000	.16	6606	2

Table 28-A

MNA-Student Demographic and Remedial Placement Policies to Remedial Writing Course Grade

N=6081
Mode=.1817

Predictors	Bivar. Gen. ETA^2	Bivar Theta	Multivar. Gen. R^2	Multivar. Theta
Ethnic/ Race	.0144	.2325		
HS GPA	.0138	.2230		
HS English	.0104	.2204		
Residence	.0088	.2156		
Age	.0082	.2141		
Placement Policy	.0053	.2046		
Educat. Level	.0031	.1972		
Student Status	.0049	.1952		
Fin. Aid	.0033	.1950		
Sex	.0018	.1848		
			.0473	.2962

Table 28-B

MCA-Student Demographics and Remedial Placement Policies to Truncated Remedial Writing Course Grade

N=4062

Predictors	ETA^2	Beta	R^2 (Unadjust.)	R^2 (Adjust.)
Ethnic/Race	.100093	.260410		
Age	.025946	.177095		
Sex	.013953	.130662		
HSGPA	.042010	.117059		
Residence	.061348	.114150		
HS English	.021384	.106432		
Educat. Level	.011781	.087226		
Fin. Aid	.013319	.052865		
Placement Policy	.035130	.041480		
Student Status	.006902	.013015		
			.19229	.18648

Table 29-A

MNA-Student Demographics and Remedial Placement Policies to College English Grade

N=3420
Mode=.3506

Predictors	Bivar.	Bivar.	Multivar. Gen. R^2	Multivar. Theta
Ethnic/ Race	.0110	.3604		
Age	.0083	.3601		
Educat. Level	.0010	.3563		
HSGPA	.0124	.3560		
HS English	.0101	.3560		
Placement Policy	.0056	.3560		
Residence	.0048	.3560		
Fin. Aid	.0029	.3560		
Student Status	.0016	.3560		
Sex	.0008	.3560		
			.0392	.3774

Table 29-B

MCA-Student Demographics and Remedial Placement Policies to Truncated College English Grade

N=2889

Predictors	ETA^2	Beta	R^2 (Unadjust.)	R^2 (Adjust.)
Age	.025523	.194792		
Ethnic/Race	.054184	.188154		
HSGPA	.037859	.178737		
HS English	.023894	.147319		
Residence	.025345	.092122		
Sex	.003306	.064908		
Placement Policy	.014126	.051439		
Fin. Aid	.015956	.037911		
Educat. Level	.001778	.037250		
Student Status	.002608	.034412		
			.13339	.12399

Table 29-C

MNA-Student Demographics, Remedial Placement, and College Outcomes to College English Grade

N=3402
Mode=.3560

Predictor	Bivar. Gen. ETA^2	Bivar. Theta	Multivar. Gen R^2	Multivar. Theta
Remedial Writ. Course	.0516	.3948		
Ethnic/Race	.0110	.3604		
Age	.0083	.3601		
Educat. Level	.0010	.3563		
HSGPA	.0124	.3560		
HS English	.0101	.3560		
Placement Policy	.0056	.3560		
Residence	.0048	.3560		
Fin. Aid	.0029	.3560		
Student Status	.0016	.3560		
Sex	.0008	.3560	.0773	.4136

Table 30-A

MCA-Student Demographics and Remedial Placement Policies to College Grade Point Avergage

N=6606

Predictors	ETA^2	Beta	R^2 (Unadjust.)	R^2 (Adjust.)
Ethnic/Race	.091951	.273833		
Age	.019809	.192694		
HSGPA	.052422	.190439		
HS English	.019561	.092270		
Educat. Level	.009728	.085681		
Sex	.001160	.040808		
Student Status	.003973	.034728		
Residence	.012443	.032096		
Placement Policy	.005985	.030015		
Fin. Aid	.018529	.017001		
			.16713	.16320

Table 30-B

MCA-Student Demographics, Remedial Placement, and College Outcomes to College Grade Point Average

N=6606

Predictors	ETA^2	Beta	R^2 (Unadjust.)	R^2 (Adjust.)
Remedial Writ. Course	.301427	.384742		
College English	.217015	.275001		
Ethnic/Race	.091951	.154015		
Age	.019809	.120832		
HSGPA	.052422	.112177		
HS English	.019561	.063098		
Educat. Level	.009728	.048733		
Student Status	.003973	.029601		
Placement Policy	.005985	.028747		
Fin. Aid	.018677	.023311		
Residence	.012443	.017368		
Sex	.001160	.016023	.42665	.42245

Table 31-A

MCA-Student Demographics and Remedial Placement Policies to Number of Courses Completed

N-6604

Predictors	ETA^2	Beta	R^2 (Unadjust.)	R^2 (Adjust.)
Student Status	.095888	.219596		
Placement Policy	.035798	.157859		
Ethnic/Race	.009039	.146299		
HS English	.065272	.115504		
HSGPA	.076622	.115174		
Age	.042750	.076321		
Fin. Aid	.005994	.061890		
Educat. Level	.011157	.050009		
Sex	.000747	.017357		
Residence	.003552	.003790		
			.18712	.18329

Table 31-B

MCA-Student Demographics, Remedial Placement, and College Outcomes to Number of Courses Completed

N=6604

Predictors	ETA^2	Beta	R^2 (Unadjust.)	R^2 (Adjust.)
College English	.364021	.435570		
College GPA	.210421	.258778		
Student Status	.095888	.158916		
Placement Policy	.035798	.146901		
Remedial Writ. Course	.151942	.087824		
HS English	.065272	.076214		
Age	.042750	.064423		
Fin. Aid	.005994	.058009		
HSGPA	.076622	.028833		
Ethnic/Race	.009030	.020520		
Educat. Level	.011157	.019300		
Sex	.000597	.008151		
Residence	.003552	.004991	.49301	.48906

Table 32-A

MCA-Student Demographics and Remedial Placement Policies to Total Credit Hours Earned

N=6605

Predictors	ETA^2	Beta	R^2 (Unadjust.)	R^2 (Adjust.)
Student Status	.081789	.234529		
Ethnic/Race	.014663	.163714		
Placement Policy	.034068	.151359		
HSGPA	.061281	.142750		
Age	.014885	.081396		
HS English	.047014	.075332		
Educat. Level	.012069	.066829		
Fin. Aid	.001867	.038920		
Sex	.000019	.012718		
Residence	.002054	.007509		
			.16654	.16261

Table 32-B

MCA-Student Demographics, Remedial Placement, and College Outcomes to Total Credits Hours Earned

N=6606

Predictors	ETA^2	Beta	R^2 (Unadjust.)	R^2 (Adjust.)
College English	.384843	.439646		
College GPA	.264938	.295676		
Student Status	.081789	.137476		
Placement Policy	.034068	.129015		
Remedial Writ. Course	.182377	.120708		
Age	.014885	.048263		
Sex	.000019	.041794		
HS GPA	.061281	.040601		
HS English	.047014	.040396		
Fin. Aid	.001867	.030151		
Ethnic/Race	.014663	.024108		
Educat. Level	.012069	.020659		
Residence	.002054	.004585		
			.52402	.52032

Table 33-A

MNA-Student Demographics and Remedial Placement Policy to Three Category Degree/Certificati on

N=6606
Mode=.8196

Predictors	ETA^2	Bivar. Theta	Multivar. Gen. R^2	Multivar. Theta
HSGPA	.0339	.8196		
Student Status	.0297	.8196		
HS English	.0269	.8196		
Placement Policy	.0128	.8196		
Ethnic/Race	.0043	.8196		
Age	.0043	.8196		
Educat. Level	.0040	.8196		
Fin. Aid	.0014	.8196		
Residence	.0007	.8196		
Sex	.0004	.8196	.0769	.8215

Table 33-B

MCA-Student Demographics and Remedial Placement Policies to Two Category Degree/Certification

N=6606

Predictors	ETA^2	Beta	R^2 (Unadjust.)	R^2 (Adjust.)
Student Status	.031297	.148156		
HS English	.027155	.117622		
HSGPA	.034659	.105793		
Placement Policy	.013636	.103821		
Ethnic/Race	.004262	.091858		
Age	.003964	.080044		
Educat. Level	.004055	.045299		
Fin. Aid	.001540	.030808		
Residence	.000676	.017891		
Sex	.000029	.007638		
			.07973	.07540

Table 33-C

MNA-Student Demographics, Remedial Placement, and College Outcomes to Three Category Degree/Certification

N=6606
Mode=.8196

Predictors	Bivar Gen ETA^2	Bivar Theta	Multivar Gen R^2	Multivar Theta
College English	.1973	.8196		
College GPA	.1367	.8196		
Remedial Writ. Course	.0721	.8196		
HS GPA	.0339	.8196		
Student Status	.0297	.8196		
HS English	.0269	.8196		
Placement Policy	.0128	.8196		
Ethnic/Race	.0043	.8196		
Age	.0043	.8196		
Educat. Level	.0040	.8196		
Fin. Aid	.0014	.8196		
Residence	.0007	.8196		
Sex	.0004	.8196		
			.2677	.8385

Table 33-D

MCA-Student Demographics, Remedial Placement, and College Outcomes to Two Category Degree/Certification

N=6606

Predictors	ETA^2	Beta	R^2 (Unadjust.)	R^2 (Adjust.)
College English	.202875	.326878		
College GPA	.148549	.254499		
Remedial Writ. Course	.078290	.118805		
Student Status	.031736	.105760		
HS English	.027155	.099548		
Placement Policy	.013636	.058523		
HS GPA	.034659	.053568		
Age	.003964	.044587		
Ethnic/Race	.004262	.035029		
Fin. Aid	.001540	.033381		
Sex	.000290	.030442		
Educat. Level	.004055	.021602		
Residence	.000676	.012017		
			.27982	.27421